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RESEARCH PAPER

# Financing Methods for Small-Scale Hardwood Plantations in Queensland, Australia

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**Abstract** Under *Vision 2020*, a target was set in 1997 for trebling the forestry plantation area in Australia by the year 2020. Government subsidies and extension for plantation establishment have largely disappeared, hence forestry expansion is highly dependent on access to private finance. Plantation expansions throughout Australia has occurred predominantly through managed investment schemes, and to a lesser extent by joint venture schemes between landholders and government or private enterprise. Relatively small-scale hardwood plantations have been established, designed to replace the hardwood timber from the native forests that will be protected from further logging after 2024 under the Regional Forestry Agreements. Views on financing methods for forestry expansion in Queensland were investigated through by an email survey of 12 forestry and finance professionals, followed by in-depth personal interviews of the same group of key informants. Issues identified include lack of transparent information, inequitable taxation system between Managed Investment Scheme (MIS) companies and small-scale forest owners, need for further R&D on all aspects of the industry, and design of a strategic alliance model for forestry investors. Participants took the view that adoption of a strategic alliance model would encourage further investment in small-scale forestry and argued that this model could protect the interests of all the stakeholders through reducing investment risk and creating competitive advantage. The potential introduction of a carbon trading scheme also attracted interest from investors, who look for recognisable structures that may alleviate the risk of investing in an industry with which they are unfamiliar. The participants considered that further R&D should be the main focus for government participation in small-scale forestry, although recognizing current difficulties with information sharing.

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## Introduction

Traditionally, forestry has been carried out on government-owned land but increasingly governments are being exposed to social and environmental pressures to either reduce or abandon logging from the native forestry estates (Enters et al. 2003). These authors commented on the fact that the general public is exerting pressure on governments to implement environmentally friendly projects and make better use of taxpayer's money. Conservation pressures have seen governments seeking new ways to participate in the forestry industry.

Globally, the balance between forest ownership classes has been undergoing rapid change. In Europe there has been progressive restitution of forest land to private owners in countries in transition, which has created difficulties in funding forestry operations (Nijnik et al. 2009). In the USA, Bliss et al. (in review) have observed a massive disinvestment of forestland by industrial owners in favour of institutional investors. These changing forms of ownership introduce the need for new financing methods, in an increasingly difficult investment environment.

The Australian government is faced with the challenge to meet the Vision 2020 targets, to increase the plantation estates by 2 M ha by 2020, relative to the area in 1997 (Plantation 2020, 2002). To attract investment from the private sector the government has created favourable tax concessions (Belcher 2006). Nearly all of these plantings were on private land, and most were earmarked for pulp production, linked to Managed Investment Schemes (MIS). These schemes are associated with short-rotation hardwood (12–15 years) and require high rainfall and fertile soils to achieve the targets set out in the investment prospectus of the companies (DAFF 2007).

Unfortunately, optimism about large growth in small-scale forestry and substantial benefits to the landowners does not always translate into financial returns. Venn (2005) carried out a financial analysis of forestry in marginal rainfall areas in Queensland, addressing the various socio-economic factors, and found that the landholders' financial expectations and excitement with regard to small-scale forestry often were not fulfilled. Clearly, small-scale forestry needs to be examined within a holistic framework and it is open for debate as to who should pay for the positive externalities which it can generate. Small-scale forestry often requires assistance from government, particularly for plantation establishment in new regions. Such assistance may be needed to address issues of weak property rights, uncompensated external benefits, imperfect market structures and lack of information by producers (Harrison 2005).

The increased interest in carbon credit trading has seen a new group of investors enquire about opportunities available in plantation forestry, and availability of investment vehicles (e.g. Dargusch et al. in process). The establishment of financial structures that will suit investors and landowners needs to be explored and developed so as to match the needs for both sectors.

This paper examines existing forestry financing structures for small-scale forestry in South-East Queensland, and opportunities for new financing structures that would suit forestry expansion. The research focuses on the opinions of both financial and forestry professionals in contrast with previous Queensland research which has centred mainly on attitudes of landholders towards small-scale forestry financing measures. The key aspects investigated include the effects of market failure, availability and relevance of the sources of information relating to small-scale forestry, the taxation system and its implications for small-scale forestry, the importance of research and development in small-scale forestry, potential effects of carbon credit schemes on small-scale forestry, and methods available for financing small-scale forestry.

## Financing Methods for Small-Scale Forestry

For the purpose of this research, following Harrison et al. (2002) the term 'farm forestry' and small-scale forestry are used interchangeably. Small-scale forestry is viewed in reference to hardwood plantations including all woodlot plantings whether for windbreaks, shelter belts, agroforestry or break-of-slope planting. The financing structure does not change the definition of small-scale forestry. All sawlog hardwood plantings in South-East Queensland are considered as small-scale forestry.

There are two main Australia financing arrangements for small-scale forestry, namely government supported schemes and privately operated schemes, and they use similar financial structures. Herbohn et al. (2000) examined these financing methods, concluding that there is no superior scheme that has been accepted throughout Australia, but rather a fragmented solution that aims to resolve individual situations. In broad terms the schemes that have attracted the most interest are joint ventures, leasing of land to grow trees and purchase of land to grow trees. Smaller schemes such as the Tasmanian trust scheme and the Western Australian share farming scheme will not be discussed because they bear little relevance to the overall picture in South-East Queensland.

*Plantation joint venture* schemes have been examined by Anderson and Halpin (1998), Curtis and Race (1998) and Harrison et al. (1999). These researchers concluded that some of the impediments to increased small-scale forestry were adequately covered by these schemes, including financial support with establishment, expertise in silviculture, reduced market risk through guaranteed sale, and stable annual income. However, these schemes have encountered resistance because of the reluctance of landholders to share equity with government agencies. In the joint venture scheme both parties have equity in the project, and the landholder has flexibility about amount invested during plantation life and consequent equity in the final crop.

*Land rentals* involve landholders leasing out their land for the duration of the rotation for an annuity payment (Harrison et al. 1999). This arrangement can suit landowners who wish to reduce their farming activities, for example for off-farm work or semi-retirement. In contrast, *corporate holdings* involve landowners selling

their land outright. This may suit a landowner who does not have family ownership succession in mind, especially when an above-market price is offered, as reputedly has been common in South-East Queensland. Some corporations prefer to avoid restrictions that may be imposed under a tenancy agreement reached with the landowner and the operating company. In discussions with property managers, land ownership was favoured because they would be able to adapt the management decisions without having to renegotiate the contracts with the owners who may well have a different agenda.

Privately operated schemes generally take the form of *managed investment schemes* (MIS) which are publicly listed and raise their funds through issuing a prospectus to attract investors. The land is generally either purchased outright or leased for the duration of the rotation which is generally between eight and 16 years. These schemes attract substantial tax concessions that can be passed on to their investors; they have been highly popular in the last decade and are responsible for most of the recent growth in the Australian plantations estate (DAFF 2007).

### Strategic Alliances Investment Models

Strategic alliance models have been used in various industries. Sharp et al. (2004) viewed strategic alliances as multi-faceted inter-organisational relationships, formed to reduce costs but also to gain financial advantage over competitors. They can therefore be seen as improving inter-organisational services for all the participants (Sharp et al. 2004). Sharp further emphasised the importance of respect, trust and commitment to the success of strategic alliances. Outside commitments of each partner can create a conflict of interest and distraction from the overall alliance goals, which needs to be overcome by the partners to ensure the survival of the strategic alliance. O'Keeffe (1998) recommended that before potential partners could establish a partnership, they would need to ensure that there is compatibility in business culture and common goals, because these are intrinsic to the success of the alliance.

Dunne (1999) observed that the uptake of strategic alliances in rural industries has been somewhat slow because historically there has been a lack of trust between the stakeholders in rural industries. Dunne (2001) linked the success of strategic alliances to the building of trust which will then lead to new areas of synergy, interdependence and identification of possible cost savings. Similarly, in noting the need for a strategic alliance between the relevant parties of the Queensland timber industry to create confidence in the long-term industry profitability, Sharp et al. (2004) linked the success of forestry alliances to the level of integration and the mutual respect of the partners. Many of these obstacles to success of the alliance can be overcome if the partners are sufficiently dedicated to the venture and are willing to accommodate the objectives of the alliance within their own strategies.

The strategic alliance model can be modified to the needs of the partners, allowing the flexibility of both vertical and horizontal integration. As an example, vertical integration may include integration of tree growing and timber milling; however, for some partners it may be important to allow interaction with business outside the alliance (horizontal integration).

Liker and Choi (2004) stressed the importance of the information flowing to and from the partners. This information needs to be relevant to the alliance. However, if the alliance is overloaded with information it becomes inefficient and the processes may be slowed or even halted. The overall collaboration and information flow between partners can only assist the process moving forward and should increase cost-effectiveness relative to the agents operating independently.

### The Potential for Payments for Environmental Services (PES) in Supporting Forestry Investment

When plantation investments have marginal profitability, it may be that payment for one or more type of environmental service provided by forestry will make the venture sufficiently profitable to justify investment. Such services could include for example carbon sequestration, watershed protection, water quality improvement, land salinity mitigation, wildlife habitat and landscape amenity. Venn (2005) carried out a financial analysis of hardwood plantations in Queensland, including payment for the externalities of carbon sequestration, salinity amelioration and ecosystem services. A sensitivity analysis was based on mean average increments (MAI) varying from 5 to 25 $m^3$/year. This research suggested that plantations with a MAI of less than 15 $m^3$/year are not financially viable on the basis of timber alone, but become viable when positive externalities payments are factored into the analysis. Lang (2006) argued that viability of small-scale forestry is closely linked to carbon credit payments, in that these payments can subsidise the management cost of growing trees. Also, he advocated that forestry investments be coordinated by a central body for trading the carbon on behalf of the group, so as to gain economies of scale.

## Research Method

A literature review was conducted to document the existing financing methods in small-scale forestry in South-East Queensland. This was followed by two surveys to establish the attitudes towards forestry financing methods.[1] The participants consisted of four groups, namely forest managers, portfolio managers (including MIS representatives), academic professionals and policy advisers. Their views were canvassed in order to identify what would be considered as the most suitable system that would increase the uptake of small-scale forestry in South-East Queensland.

Within the groups, the individual participants were selected based on their current interest in forestry or financial areas and relevance of their knowledge to South-East Queensland, as well as accessibility to the researcher. Twelve

[1] Ethical approval for this research was obtained from the ethics committee of The University of Queensland prior to the research commenced. All participants were given an outline of the research aims and processes, and an assurance that the survey data would be treated as confidential, and were asked to sign a form giving consent for use their data. They were made aware that they could withdraw from the research at any time. All data including transcripts and recordings were destroyed after being collated to further ensure the privacy of the participants.

participants were considered to be a representative sample given their level of expertise and degree of specialisation. According to Hair et al. (2007), achieving validity of research depends largely on the rigour exercised in collecting the data. In this research the relatively small number of participants could be seen as a limitation, although as noted by Penrod et al. (2003), in specialised areas of expertise this is less relevant because the responses are reliable in that information is collected from experts.

The surveys were conducted during June to December 2007. After initial acceptances to participate in the research, an email questionnaire was distributed to each participant in order to collect data relating to their attitudes towards options for financing forestry. The questionnaire consisted of eight sections, containing broad questions dealing with the effects of market failure on small-scale forestry, the availability and relevance of the sources of information, the taxation system and its implications for small-scale forestry, the importance of research and development, potential effects of carbon credits on small-scale forestry, the methods available for financing of small-scale forestry. Forming strategic alliances was identified during the research process as a potential solution to many of the problems associated with development and financing of small-scale forestry. The use of email to send and receive the questionnaire facilitated a rapid turnaround. Eleven replies were obtained, and were collated into themes, and the response categories were divided into participants with forestry expertise versus participants with little or no forestry expertise but strong expertise in finance.

Once data from the email survey were collated, a follow-up survey was conducted via personal one-on-one semi-structured interviews using open-ended questions. Ten respondents participated in this survey, including the non-respondent from the email survey. Two of the original email respondents were overseas and not available for the follow-up survey. The follow-up interviews allowed more in-depth probing in relation to responses in the email survey. The interviews were recorded with an MP3 player.

## Survey Findings on Financing Methods

The survey findings in relation to the financing and operation of small-scale forestry are now discussed.

### Availability of Information in Small-Scale Forestry

The respondents from the financial sector were of the opinion that the information available regarding small-scale forestry investments was often ambiguous with unbalanced representation of the future financial returns, which made it difficult to recommend investment in forestry to their clients.

The government forestry agency had recently been corporatized, and the forestry participants had concerns regarding the sharing of research and development information, duplication of research and unnecessary cost. This in turn leads to an inefficient use of resources and slows the overall progress of small-scale forestry.

The same participants wanted to see greater transference of genetic material in order to achieve better outcomes for their investors and the general public. It was commented that the amount of forestry R&D seems to be falling, research results are frequently not documented in a widely available form, and research findings are often treated as ‘commercial in confidence’. It was accepted that in some cases there is commercial sensitivity but that this could be resolved if all parties were united in a strategic alliance, which would lead to a higher return from research dollars and more funds available for new research.

Logs were seen to be underpriced, and lack of transparency in price setting was a concern to both financial and forestry participants. Traditionally, prices have been set by the state government, and do not always reflect the market value of timber. About 63% of all participants believed that a free market would help the industry grow.

### Relevance and Source of Information in Small-Scale Forestry

Forestry participants were keen to source their information from seminars and their government contacts. The financial participants preferred to source their information from industry-recognised experts and current investors, on the grounds that the information could be more tailor-made for their investors. All parties mentioned the difficulties in obtaining accurate, reliable information, and in judging the quality of information sources. The general view was that obtaining appropriate financial information is difficult and this impedes the acceptance of small-scale forestry in the financial sector. The participants stated that this issue will need to be addressed before they are willing to recommend investment in forestry to their clients.

### The Australian Taxation Systems and its Implication for Small-Scale Forestry

The taxation system has been a crucial element in developing small-scale forestry. This was demonstrated in responses in both the email survey and the follow-up personal interviews. Of the email survey respondents, 59% selected measures relating to taxation as offering potential to reduce risk in small-scale forestry. Confirmation of this was then made in the follow-up survey, where it was argued that taxation benefits have been the catalyst for growth in the forestry industry.

It was suggested that there is a need to revise the taxation system in relation to forestry to ensure that equivalent benefits will be available to all relevant groups. Concerns were voiced as to the potential negative impacts that managed investment schemes (MIS) may have on the forestry industry with their tendency to focus on selling tax benefits rather than on growing trees. Some participants went as far as warning of the necessity of having greater transparency for these schemes so as to properly inform the investors on drawbacks and issues relating to the timber industry and its returns. Despite these concerns it was acknowledged that these schemes have created a critical plantation mass and that small-scale forestry will gain from these infrastructural investments and therefore MIS have made a positive contribution from this perspective.

### The Importance of Research and Development in Small-Scale Forestry

In regard to government involvement in forestry, 50% of the participants in the email survey selected research and development (R&D) as being the most important area. The follow-up survey reinforced this view, with participants saying that forestry R&D needs to be focused on genetics, pest and disease management, wood quality, silvicultural methods and financial analysis of new ventures. While it was accepted by the forestry participants that some research findings are available, the lack of up-to-date information and of communication between the various agencies conducting research and the field officers was frustrating, and led these participants to be less proactive when it came to research. The areas of research that were cited were taxation, social issues, financial analysis, financing models, landholder's attitudes, wood quality improvement and processing efficiency. If these areas of research are not given adequate attention then the lack of information will remain an impediment to small-scale forestry.

### Potential Effects of Introducing Carbon Credits on Small-Scale Forestry

From the two surveys, it was clear that participants thought of trees as carbon sinks and considered that introduction of a carbon credit scheme would make plantation investments more attractive. Half of the participants in the email survey had a preference for prices of carbon credits being set by the market. However, when broken down further, 80% of the financial participants were of this opinion compared with only 16% of the forestry participants, the latter preferring annual price setting by a central body. In the follow-up survey, these respondents explained that a fixed carbon credit price being set by a central body would maintain stability and avoid market fluctuations having a negative impact on plantation profitability. One point all the participants agreed on was that carbon credits could become intrinsically linked to the success of small-scale forestry, particularly if a well-designed trading system were introduced.

### Preferred Methods for Financing Small-Scale Forestry

The preferred modes of finance were found to be either leasing the land from the landholder with the purpose of growing trees, or entering into a joint venture agreement. All participants were of the opinion that there needs to be a cooperative engagement between the investor and the landholder to achieve maximum efficiencies. Financial participants with no expertise in growing trees viewed the potential of plantations to be uncertain early in the rotation. In the follow-up survey, clarification was sought and it became apparent that the issues would be of less concern if the financial burden could be shared with other parties. The financial participants were looking for expertise in tree growing whereas the forestry participants were focusing on long-term commitments and potential for further investments. It was identified that new tree-growing regions would require partnerships to share the responsibilities and experience in forestry but a long-

term approach would be needed, in order to spread the financial risk between partners.

It was mentioned that plantation establishment in new areas faces problems of lack of infrastructure and services, lack of incentives for investors to capitalise regional areas, unsuitable labour, and long transport distances, and may require government legislation to overcome these hurdles before investors would be confident to recommend such forestry investments to their clients. Concern was expressed that if timber prices fell private investors might abandon their forestry investments. Government intervention would be a possible method of supporting small-scale forestry through either partnership with investors or policies favouring small-scale forestry investments.

### Managed Investment Schemes (MIS)

The email survey found that 69% of the participants believed that farmers and MIS companies would be the most suitable groups to develop small-scale forestry. During the follow-up interviews this support became more qualified and concerns were raised relating to the lack of transparency in MIS as well as exaggeration of projected financial returns. It was further noticed that these schemes are well financed through shareholders funds but concerns were raised as to how these funds were utilised and whether these investments had the shareholders best interest at heart or were merely looking to satisfy the hunger of investors towards tax minimisation schemes.

Currently, MIS companies and other forestry ventures compete for land resources, and due to taxation advantages the MIS companies consistently outbid the competition for land, hence inflating land prices. MIS companies have purchased the most productive land, and high quality land is now becoming more difficult to source, so the companies need to look toward more marginal land. Land with lower rainfall will be more suited to long rotations for sawlogs, and it was suggested that in order to become viable in these new regions MIS companies would be inclined to join strategic alliances. Some of the key informants were MIS representatives, and could see the merit of being part of an alliance within small-scale forestry in the future to gain some of the advantages that this would offer.

The forestry participants acknowledged that MIS schemes have created a critical mass and that this in itself has generated more interest in plantation establishment, from which small-scale forestry has gained. The lobbying power that these fund managers have towards government will create a more favourable environment for small-scale forestry to grow.

## Discussion

All participants in the email and follow-up surveys expressed the view that the traditional financing methods of joint ventures, leasing of land from farmers to grow trees and purchase of land for growing trees have successfully achieved some of the goals set by the various organisations. The participants were somewhat more

pessimistic about the expansion of small-scale forestry because this will require substantial new finance and suitable land, in already established forestry regions having high land prices, thus new approaches between the various partners will be needed.

The participants said that greater cooperation is required between forestry stakeholders to ensure efficiencies and allow small-scale forestry to grow in a strong and sustainable way in South-East Queensland. The introduction of carbon trading schemes was seen by the participants as likely to be instrumental in the future growth of small-scale forestry. There was a genuine concern about the fragmentation of the industry through various interest groups competing against each other.

The concept of strategic alliance was brought up in the early follow-up interview by one of the financial participants and was then introduced in later discussion to gauge attitudes of all participants. The strategic alliance model developed in early interviews was a simple three prong approach as illustrated in Fig. 1, where a central management company would liaise between the groups. It was noted that the strategic alliance model could be applied both in Queensland and in other states and countries to help expand small-scale forestry.

The participants discussed the strategic alliance model in depth, making many positive comments in regard to its possible implementation within small-scale forestry, and advocated this as an effective way to ensure the financial future of small-scale forestry. The flexibility of these arrangements appealed to the participants and the fact that it lends itself to replication in new regions was also considered a positive factor.

A more complex strategic alliance model (Fig. 2) was designed using information gathered from discussions with the participants and examination of the elements from the model described by Sharp et al. (2004). It encompasses all the potential stakeholder groups that may have a position in the strategic alliance. At the centre of the alliance, a management company takes responsibility to find a common bond between the partners.

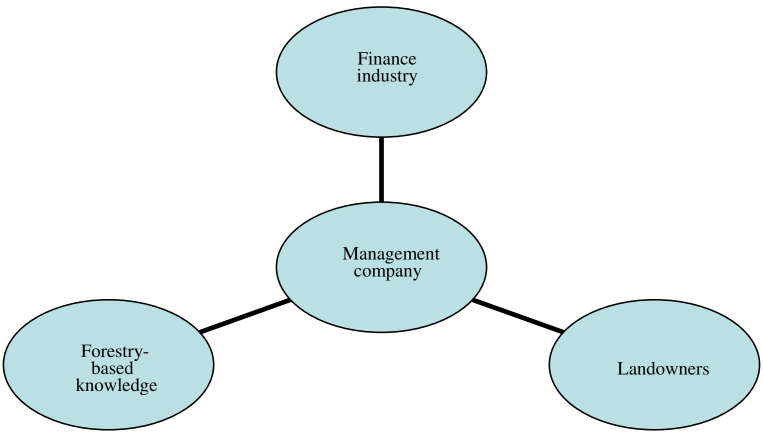


**Fig. 1** Strategic alliance model suggested by participants

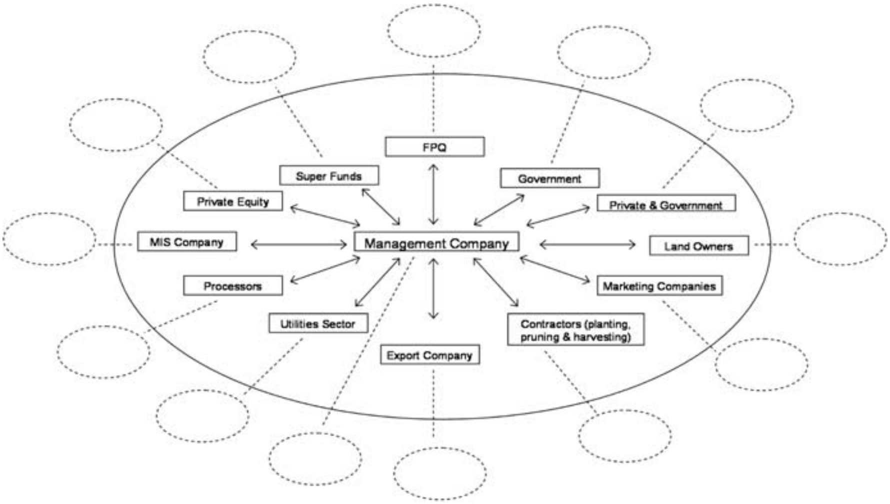


**Fig. 2** Strategic alliance model derived from discussions with key experts and the model of Sharp et al. (2004)

Forestry Plantations Queensland (FPQ), government, land owners, marketing companies, contractors, export companies, utilities, processors, MIS, private equity and super funds all have an interest in forestry and as such interact with the central management company.

The participants emphasised that there is a need for alliances to be flexible enough to accommodate both the interests of the members within the alliance and their commitments to partners outside the alliance. The outside partners who are not in the alliance are represented by the dotted lines and ellipses outside the core of stakeholders. These represent horizontal integration whereas the rectangles represent vertical integration. The arrows symbolise the information flow between the partners within the alliance. The participants expressed the view that the information should be centralised and diffused to the relevant alliance members on a need-to-know basis to avoid information overload.

The management company is represented in the middle of Fig. 2, and interacts with all members of the alliance. Its role is to bring together suitable members, distribute information amongst them, and oversee the integration of all aspects from plantation establishment through to the sale of final forest products, thus becoming a common link between all parties. It could also bring together the various financial risk-takers throughout the investment horizon, for example private equity in early stages, and more long-term lower return investors such as superannuation funds once initial establishment risks have been overcome.

The strategic alliance model was seen as a way to overcome duplication of research which was a concern raised by the forestry participants. The view was expressed that too many research experiments are duplicated and this could be a poor use of resources. R&D expansion was seen as crucial if development of forestry in new regions is to occur. Strategic alliances would be large enough to

invest in new R&D projects but more importantly the trust that has been created would allow the sharing of information generated by the R&D between the partners, providing benefits to all partners within the alliance, and this may be a source of competitive advantage.

Instead of the members operating as many individual entities, forming a strategic alliance means that through economies of scale the alliance will be stronger and more able to overcome market failure. The strategic alliance model allows the members to establish plantations in new regions through supporting each other in a partnership. Without such group action, individual entities would not enter new regions because the task of pioneering is difficult without support; it would then be left to the government alone to establish small-scale forestry in these areas which according to participants has become unrealistic in the current political climate.

Throughout the research the anticipated emergence of a carbon credit scheme was brought up as the main reason for the resurgence in interest in forestry. The participants emphasised that there will be an opportunity for small-scale forestry to develop further from emission trading scheme. The cost of auditing (setup and monitoring) may be too high for a small individual forestry operator to earn carbon credit income. A strategic alliance may overcome this by sharing the cost of setup and monitoring over a large number of hectares with multiple partners. In fact, it is conceivable that the alliance would be large enough to create its own carbon credit fund. In turn, the alliance would then create a snowball effect because its own success and size of plantations would attract further investment from carbon emitters, either from direct investment or through the purchase of carbon credits. The strategic alliance also allows the partners to be in a position to participate in carbon trading.

Small-scale forestry suits the strategic alliance framework well because landowners who have small woodlots can continue to operate as part of the larger alliance, thus giving them the ability to be financially viable. The size of the woodlot would no longer be of importance provided it is situated within the area defined by the alliance. Hence small-scale forestry would be able to gain the same advantages as large-scale forestry through economies of scale achieved within the alliance. It could then be said that this would be the ideal solution for financing small-scale forestry.

The participants indicated that much of the land with high rainfall and fertile soil suited to short-term forestry rotations in Australia is currently controlled by MIS corporations. Land suitable for small-scale forestry is an increasingly scarce resource, with large amounts of money dedicated to the purchase or lease of the land in a bid to secure the land above other competitors. During the mid to late 2000s, the prices paid for land increased substantially due to this competition of lifestylers, corporate buyers and farmers wishing to expand their operations. Within a strategic alliance, competition for land would be reduced as partnerships are created, favouring development of small-scale forestry and releasing funds for use in research and development activities.

Strategic alliances have the potential to gain substantial political power in that they will be representing all the stakeholders in small-scale forestry as one lobby group. Creating economies of scale will ensure a more profitable future for small-

scale forestry and generate regional socioeconomic, environmental and infrastructural benefits to the areas where alliances exist.

## Conclusion

This research has identified the *strategic alliance* as a model that could suit the development and financing of small-scale forestry in South-East Queensland. Survey participants viewed this model as a way to unite and overcome the major problems relating to small-scale forestry. The strategic alliance model has many obvious advantages, although further research is required. There is a need to recognise the financial value to the partners of being within a strategic alliance versus the existing financing models of joint venture schemes, outright purchase of land, leasing to grow trees and investing in MIS. The values of strategic alliances should be examined on financial, environmental and socio-economic grounds. For an alliance to succeed the members must have shared outcome expectations from forestry and the alliance itself. In the forestry industry there has been no research to clearly identify which type of partner would be most suitable for strategic alliances. Also, there is a need for research into how a strategic alliance could be implemented, how it would operate within the forestry industry and how this model would work to help expand small-scale forestry.

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